Interview with Rear Admiral Victor See Jr.

Director, Communications Systems Acquisition and Operations Directorate, National Reconnaissance Office
Commander, Space and Naval Warfare Systems Command Space Field Activity
Program Executive Officer for Space Systems

CHIPS: I know that you are triple-hatted, can you talk about your work?

Rear Adm. See: The first job that I have is Communications Director here at the National Reconnaissance Office. In that role I lead the acquisition and operations of the network that provides communications support to the National Reconnaissance Office and the director. We tie all the capabilities together that the NRO collects and all of that information rides our network. It's a space-terrestrial enterprise worldwide network. That is about all I can say at this level.

Rear Adm. Victor See Jr. in his office at the National Reconnaissance Office.

My second job is the commander of the Space and Naval Warfare Systems Command Space Field Activity. In that role I provide line leadership and management of all the Navy people that work at the NRO. I also coordinate naval space research, development and acquisition for the Navy. I have a group, the Naval NRO Coordination Group, which works for me and also serves as the primary interface between NRO programs and the OPNAV staff. They help interface 'big' Navy into national programs and also ensure that all the work that goes on here at the NRO is leveraged by the Navy.

My third job is the Program Executive Officer for Space Systems, and I report to the Assistant Secretary of the Navy for Research, Development and Acquisition, Dr. Delores Etter. I manage UHF SATCOM (ultra high frequency satellite communications) for the Navy and Department of Defense. The Navy is responsible for procuring unprotected narrowband UHF SATCOM capability. We have purchased UHF Follow-On (UFO) satellite systems which are all launched and in operation. We are currently under contract for the next generation UHF that is the Mobile User Objective System. We are procuring MUOS with the associated ground infrastructure and then interfacing through JTRS (Joint Tactical Radio System) terminals and teleports to provide UHF service in the future.

CHIPS: It sounds like there is a complementary link between all of your different roles. How does this affect SPAWAR?

Rear Adm. See: Because I have these three hats as a flag with dual naval and national responsibilities, I can provide insight into national systems capabilities and facilitate the implementation of the FORCEnet architecture and delivery of space capabilities to the fleet. For national space programs, having a Navy acquisition flag in its senior executive ranks provides a direct link to leadership and ensures access to Navy's Space Cadre, people with a unique combination of technical skills, and space and naval operational experience. If you look at the Navy Space Cadre in the NRO, we hold a high percentage of senior leadership positions because the Navy Space Cadre is highly valued.

By triple-hatting the space acquisition flag, it allows me to have influence over relevant technology development and design — and acquisitions and operations of national security programs. All of these capabilities are provided for the national community and for the Navy. We can influence national programs to provide the best support to the Navy in open ocean, littoral and Navy operations.

For SPAWAR, having a dual-hat (in SPAWAR and NRO) allows us to provide insight into all of the communications programs that we have in the national system which interface with the Navy FORCEnet architecture and deliver space capabilities and connectivity for FORCEnet and future naval networks.

CHIPS: What has been happening with the Space Cadre?

Rear Adm. See: There has been a lot of interest in the Space Cadre. The establishment of a DoD Space Cadre was directed under the 2002 Space Panel led by Secretary Rumsfeld before he became Secretary of Defense. There were some specific recommendations and one of them was that the services each needed to create a Space Cadre. The Navy Space Cadre was created in 2002 as a distinct body of individuals that have space expertise and are integrated into the active duty Navy.

Today, the Navy Space Cadre consists of officers, civilians and an enlisted corps who use space capabilities. We have a Navy Space Cadre advisor, Cmdr. Scott Margulis, who has been responsible for developing the Space Cadre plan. The Space Cadre Human Capital Strategy was published in December 2004. Now we are trying to expand the areas that the Space Cadre is involved in

including warfighter assessment; requirements articulation; science and technology; research and development; space system acquisition; and space operations.

There is a difference between the Air Force Space Cadre and the Navy Space Cadre. Air Force members come into the Space Cadre right from the start and spend the majority of their time in the Air Force in the space community. For Navy personnel, we are going to manage the Space Cadre similar to the way the defense acquisition community is run, where Navy operational individuals (these could be aviators, surface warfare officers, submariners or information professionals) have the education and an experience tour or postgraduate degree in space systems engineering or space operations. They can be designated members of the Space Cadre and then work in our Space Cadre billets spread throughout the Navy.

We are also looking at carrier strike group and expeditionary strike group billets for Space Cadre members. Vice Adm. James McArthur (Assistant Chief of Naval Operations for Information Technology and Commander, Naval Network Warfare Command (NETWARCOM)) has been very proactive in that he designated a fleet commander to be a space prototype as well as a carrier strike group to be the space prototype, which is CSG 8 under Rear Adm. Allen Myers.

CHIPS: Would they be at the staff level?

Rear Adm. See: We put a couple experienced Space Cadre members on his staff. We have also had the opportunity to get his staff and a lot of the commanding officers of the ships in his strike group into orientation briefings about national security space programs and the PEO Space Systems. We have sent his staff through a one-week course under the National Security Space Institute, which is the Air Force school that has been established to educate and train Space Cadre members across all the services. We have had a lot of interface with CSG 8, and they will be deploying soon and ensuring that they take the best advantage of all the space capabilities that are available.

CHIPS: What about enlisted personnel?

Rear Adm. See: The most immature part of the development of the Space Cadre is the enlisted membership. We are just beginning to bite off on that piece. Cmdr. Margulis is working with people in the bureau, both naval personnel and people in the national security space arena to identify enlisted Space Cadre billets and then figure the correct Naval Officer Billet Classifications for the qualifications to be in the Space Cadre. We have enlisted billets here in National Security Space as well as space enlisted folks at NETWARCOM and the Naval Space Operations Center. All of those billets and the people that fill those positions should have the opportunity to get the Space Cadre qualifications and educational training to be part of the Space Cadre.

CHIPS: Will members keep their designation or will they rotate in and out of billets?

Rear Adm. See: The Navy is going to manage this like you just stated. Members will have an additional qualification designator in their record that says they are a member of the Space Cadre. But they will also have the ability to go in and out of Space Cadre positions because they have to maintain their opportunities for promotion within 'big' Navy. This means members have to go to sea, and to critical billets that are required within whatever their career field is. Members will still have the additional qualifications designator of a Space Cadre member, which means we can track them and when Space Cadre jobs are open, we have the ability to propose an individual to fill a position.

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– Rear Adm. Victor See Jr.

CHIPS: How do you see Navy's role expanding in space initiatives over the next several years?

Rear Adm. See: The Navy Space Cadre is small when you compare it to the Air Force. We are trying to fill as many Space Cadre positions as possible and are looking at increasing Navy presence at more locations. This is a difficult task when the Navy is downsizing. I have had these discussions with the Chief of Naval Personnel as well as the Vice Chief of Naval Operations (VCNO) and CNO. They feel that small growth in the Space Cadre is good news for the future of the Navy because the Navy is such a large user of space capability. We are trying to expand the reach of the Space Cadre into new areas and programs. It is a very slow process right now because of the changes ongoing in the Navy with rightsizing.

CHIPS: How is the size of the Space Cadre determined?

Rear Adm. See: This is done by the Navy Space Cadre Advisor's office in coordination with the Space Cadre Functional Authority, Commander, NETWARCOM, based on the needs of the Navy. Although not all communities are in a draw down, the Space Cadre does not own its billets. Space Cadre billets are drawn from many different restricted and unrestricted line communities. The Space Cadre community looks at its billets annually and works with the Navy to properly assign Navy Subspecialty Codes to the billets and Additional Qualification Designators to its Space Cadre members.

CHIPS: The PEO Space is relatively new. Can you talk about some of the challenges and achievements that you have experienced?

Rear Adm. See: PEO Space Systems is a little over a year old. It was established in June 2004. The primary mission of PEO Space Systems is to buy UHF SATCOM services for the Department of Defense. We have a new program, which is the Mobile User Objective System. The MUOS program contract was awarded in September 2004. The MUOS team and the prime contractor, Lockheed Martin, just completed our Preliminary Design Review Phase. The program is on cost and schedule. Now we are executing the Critical Design Review Phase. So MUOS today is executing to our plan, and we want to keep it on a successful path.

CHIPS: I can't think of any program that is on cost and schedule.

Rear Adm. See: We have many years to go, but today I am very happy with the way the program is executing and Lt. Gen. Robert Shea (Director, Command, Control, Communications and Computer Systems, the Joint Staff J6) is too. The UHF program is also very successful. It is probably the most successful space program we have had. We brought a few of the satellites in under cost and on schedule. We have had a very successful operational record. We want to keep that record going with the Mobile User Objective System.

CHIPS: What value will it bring to the Navy and the DoD?

Rear Adm. See: The warfighter requires a lot of communications. UHF communications are one of the big suppliers of connectivity for the future warfighter. MUOS has the mission requirement to satisfy mobile users — Army, Navy and Air Force — in net-centric warfare. Many of these capabilities will be satisfied by MUOS including Army comm on the move.

I met with Lt. Gen. Shea and his staff Nov. 21 (2005), to provide a program and risk assessment update. He is very interested in how MUOS is doing. He realizes that MUOS is critical to the future success of the mobile warfighter. The DoD, in general, relies a lot on UHF communications for operations.

CHIPS: Do you see this as a transformational effort?

Rear Adm. See: MUOS is considered part of the transformational communications architecture. The UHF SATCOM Constellation is going to tie into the transformational communications architecture through the Global Information Grid (GIG). Then everything that is available through the MUOS system will be accessible through the GIG. The way MUOS will interface with the GIG is through the Teleport Program. We have been working with PEO C4I and Space and the Teleport Program to ensure that we have the connectivity from MUOS to the GIG using JTRS radios.

CHIPS: What is the relationship between the UHF program and MUOS?

Rear Adm. See: UHF Follow-On is in the operations and maintenance phase of the program. It is managed by the SPAWAR Communications Satellite Program Office (PMW-146) under the leadership of Capt. David Porter and his team in San Diego. UHF Follow-On is operated by NETWARCOM's Naval Network and Space Operations Command (NNSOC, the old Naval Space Command). They are responsible for on-orbit maintenance and operations of the constellation and led by Capt. Mack Insch at Point Mugu. He works for Rear Adm. Gerald Beaman, Commander, NNSOC. The plan is for this same group to take on MUOS operations. They have been part of the program since we began.

CHIPS: What is the schedule for delivery?

Rear Adm. See: The first launch for the MUOS I vehicle is supposed to take place December 2009 for a March 2010 OOC (On-Orbit Capability). One-year launches are planned after that. We are going to launch a total of five MUOS vehicles. It will be four operational vehicles with one on-orbit spare.

CHIPS: Why do you think that space program estimates have been such a challenge to execute? How have you mitigated the risks associated with this program?

Rear Adm. See: Space programs of late have suffered a lot of bad press. There are probably a couple of reasons why we have had so many issues with these programs. One is funding instability; the second one is requirements growth. You have an operational requirements document that says we need these capabilities, we put something on contract and then while we are in the development or design phase, the users come in and say we need more. We need these additional requirements filled. Many times the additional funding does not come with it. You wind up committing to capabilities that you cannot afford. There are also some issues with the lack of understanding between the government team and contractor teams.

Specifically, with respect to MUOS, we had a Component Advance Development (CAD) contract with a couple of prime contractors. This was a risk reduction phase that we did early in the MUOS contract. We looked at what technologies we needed to have a successful program. In the CAD phase, we looked at what technology readiness levels were needed for each of the technologies. Then we matured them to a level six, including subsystems and systems that we need for the UHF environment. UHF SATCOM is not a huge new technology jump. We also went with a good provider. Lockheed Martin is going to be using its proven 2100 commercial bus, which it has launched and operated many times. Lockheed has a good history.

The last thing that we did is put a legacy UHF Follow-On payload on the MUOS bus. This is a risk reduction strategy for the program because once the first MUOS vehicle is up, it will have a legacy operational payload. The users that are in operation at that time will be able to use this vehicle with their current terminals and radios as soon as the vehicle OOC is declared. We just finished the Preliminary Design Review and we are going into Critical Design Review. As long as we maintain funding stability and continue on with our risk reduction activities, we are confident that we are going to be able to keep on schedule.

CHIPS: How does the MUOS fit in with the strategies for FORCEnet and the GIG?

Rear Adm. See: When you go to the Transformational Communications Architecture (TCA) senior leadership team meetings, of which I am a voting member, MUOS is considered one of the key capabilities in TCA. GIG bandwidth expansion is going to be the worldwide network that carries all the information. It will create a ubiquitous bandwidth-available environment that all the warfighters can access. You will have a couple of satellite systems that are responsible for moving information from warfighters on the ground or at sea into space and then down to a GIG point of presence. MUOS is one of those systems that the TCA is counting on.

MUOS is the future DoD narrowband SATCOM system that we

have to deliver, and it is going to be providing a ten-fold increase in capability over what the UHF constellation provides today. It will provide a lot more bandwidth and accesses to the warfighters. MUOS also uses commercial technology. It has a new waveform and the spectrally-adapting wideband code division multiple access, or WCDMA, which is a commercial technology. We are using a lot of lessons learned in the commercial SATCOM industry that will help bring a lot more capabilities to the system.

I should talk about some of the activities that Capt. Porter has done with PEO Space Systems and the program. PEO Space Systems is a charter member of the FORCEnet Coordination Council, which is designed to guide the implementation of FORCEnet. FORCEnet is the Navy's component of the GIG and is closely tied to the Army's LandWarNet and the Air Force's C2 Constellation, which comprise the other service components of the GIG. MUOS and NRO involvement in the development of the GIG ensures that MUOS is aligned with and supports the tenants of the GIG and the development of network-centric warfare.

We are working within the standards of what is required to connect to the GIG. We are aligned and in compliance with the vision for the GIG and TCA version 2.0. We are integrally tied to the approved architecture via the teleports and the JTRS radios. All of the information that rides the MUOS constellation will be available.

CHIPS: How does this fit in with the CNO's vision of the future?

Rear Adm. See: When the CNO had his Flag Officer Conference in October (2005), he put out his 2006 Guidance. If you read the fine lines in the 2006 Guidance, the CNO is asking for some specific missions to be satisfied. His vision is for the Navy to keep the sea lanes open and free. He wants a forward-deployed Navy that is surge-capable. He wants the Navy to be agile and lethal enough to deter and defeat any enemy in support of the joint force. All of the things that we are doing within Navy space, including national programs as well as PEO Space Systems, are vital to every aspect of the CNO's vision.

The CNO's vision requires net-centric connectivity in the implementation of FORCEnet to be successful. The Navy is highly dependent on this connectivity and FORCEnet. Because the Navy operates in dispersed units (it is not like they have a fiber optic cable tethered to the back of every ship), units have to be able to communicate and navigate, see over the horizon and provide worldwide maritime domain awareness.

Space is that key piece that allows the connectivity of all our forward-deployed units. All of the things we are doing under PEO Space Systems, MUOS and national security space programs are critical to the future operations of the net-centric, connected Navy in the 21st century.

CHIPS: Americans are fascinated with space. Do you find that your enthusiasm has increased because of your space responsibilities?

Rear Adm. See: For the last 15 years, except for one three-year tour, I have been working in space and have had opportunities to do things that not many people get to do. My fascination has grown. I love the business that we are in. I love the opportunities presented to Navy personnel across the board and national security space programs. I think the future is bright. If I were 'King for a Day,' I would double the number of people in the Space Cadre. I know that is not possible right now. But we have a lot of opportunities. We are trying to keep up with the need as best we can.

CHIPS: What should readers know about the Navy's role in space?

Rear Adm. See: We have undertaken an aggressive communications plan with the help of Vice Adm. McArthur. We are making sure that we are communicating with the right people. We briefed Adm. Gary Roughead, Commander, U.S. Pacific Fleet; Vice Adm. Charles Munns, Commander, Submarine Force, U.S. Atlantic Fleet; and Vice Adm. Mark Fitzgerald, Commander, Second Fleet, on space capabilities. Vice Adm. McArthur has met with Adm. John Nathman, Commander, U.S. Fleet Forces Command and U.S. Atlantic Fleet to review the space way ahead.

It really is an education process. We work hard every day to make sure people understand where all of these space capabilities come from. You cannot just assume that it is always going to be there if you do not have qualified, certified, knowledgeable people working all of the processes that bring the capabilities to bear. We want to educate seniors within the Navy and make sure they understand how we can help them succeed in their mission.

CHIPS: Do you think there are strategic advantages to space that have not been thought of yet?

Rear Adm. See: Probably they have been thought of, but they may not have been developed, approved or funded. There are a lot of capabilities that many of the services and agencies are not taking advantage of yet. You have to be careful because space is not the answer to everything. You have to strike a balance between the inherent capabilities of a strike group as well as what space can bring to the battle and warfighter. I think we have come a long way in the past 20 years in incorporating space capabilities. I believe there is even more that we can do in the future. That is part of our mission — to help the Navy Space Cadre bring all these capabilities to bear so that the Navy can succeed in future missions.

What we are doing in Navy space and with our national space programs are vital to every aspect of the vision because in the age of network-centric operations the Navy is more dependent than ever on space. Space provides the ability to network dispersed units to communicate, navigate and see over the horizon, and it provides worldwide Maritime Domain Awareness.

Space is the indispensable lifeline for a forward-deployed, 21st century Naval Force.

For more information about the SPAWAR Space Field Activity, PEO Space Systems and NRO Group go to the SPAWAR Web site at http://www.spawar.navy.mil/.

CHIPS